

IN THE CLAIMS:

1. (Original) A method for detecting errors in a device path, the method comprising:
setting a time span for a time window based on a time to process a successful input/output command; and
monitoring a device input/output stream during the time window to detect sequential and distributed errors having a sensitivity that is user definable.
2. (Original) The method of claim 1, wherein the time span is dependent upon system loads and variations in transport speeds.
3. (Original) The method of claim 1, wherein monitoring a device input/output stream includes monitoring input/output retries, input/output errors, and a time to process an input/output command during the time window.
4. (Currently amended) A method for detecting errors in a device path, the method comprising:
setting a time span for a time window based on a time to process a successful input/output command;
starting the time window;
responsive to the time window ending, determining whether at least one input/output error occurs on a device path during the time window; [[and]]
responsive to one or more input/output errors occurring on the device path during the time window, incrementing an error count by one;
determining whether the error count reaches a predetermined limit; and
responsive to the error count reaching the predetermined limit, disabling the device path.
5. (Original) The method of claim 4, further comprising:
responsive to an input/output command returning successful, determining a new time span for the time window.

6. (Original) The method of claim 5, wherein determining a new time span for the time window includes:
determining an average time to process a good input/output operation.
7. (Original) The method of claim 4, further comprising:
responsive to an input/output command returning with a timestamp outside a current time window, starting a new time window.
8. (Original) The method of claim 7, further comprising:
setting a start time of the new time window equal to the timestamp of the input/output command.
9. (Canceled)
10. (Currently amended) The method of claim [[9]] 4, wherein the error count is a sequential error count.
11. (Original) The method of claim 10, further comprising:
responsive to an input/output command returning successful, setting the sequential error count to zero.
12. (Currently amended) The method of claim [[9]] 4, wherein the error count is a distributed error count.
13. (Original) The method of claim 12, wherein determining whether the error count reaches a predetermined limit is performed responsive to a predetermined number of time windows being counted.
14. (Original) The method of claim 4, wherein determining whether one or more input/output errors occur on a device path during a time window is performed responsive to an input/output command returning with a timestamp outside a current time window.

15. (Currently amended) An apparatus for detecting errors in a device path, the apparatus comprising:
 - means for setting a time span for a time window based on a time to process a successful input/output command;
 - means for starting the time window;
 - means, responsive to the time window ending, for determining whether one or more input/output errors occur on a device path during a time window; [[and]]
 - means, responsive to one or more input/output errors occurring on the device path during the time window, for incrementing an error count;
 - means for determining whether the error count reaches a predetermined limit; and
 - means, responsive to the error count reaching the predetermined limit, for disabling the device path.
16. (Original) The apparatus of claim 15, further comprising:
 - means, responsive to an input/output command returning successful, for determining a new time span for the time window.
17. (Original) The apparatus of claim 16, wherein the means for determining a new time span for the time window includes:
 - means for determining an average time to process a good input/output operation.
18. (Original) The apparatus of claim 15, further comprising:
 - means, responsive to an input/output command returning with a timestamp outside a current time window, for starting a new time window.
19. (Original) The apparatus of claim 18, further comprising:
 - means for setting a start time of the new time window equal to the timestamp of the input/output command.
20. (Canceled)

21. (Currently amended) The apparatus of claim [[20]] 15, wherein the error count is a sequential error count.
22. (Original) The apparatus of claim 21, further comprising:
means, responsive to an input/output command returning successful, for setting the sequential error count to zero.
23. (Currently amended) The apparatus of claim [[20]] 15, wherein the error count is a distributed error count.
24. (Original) The apparatus of claim 23, wherein determining whether the error count reaches a predetermined limit is performed responsive to a predetermined number of time windows being counted.
25. (Original) The apparatus of claim 15, wherein determining whether at least one input/output error occurs on a device path during a time window is performed responsive to an input/output command returning with a timestamp outside a current time window.
26. (Currently amended) A computer program product, in a computer readable medium, for detecting errors in a device path, the computer program product comprising:
instructions for setting a time span for a time window based on a time to process a successful input/output command;
instructions for starting the time window;
instructions, responsive to the time window ending, for determining whether at least one input/output error occurs on a device path during the time window; [[and]]
instructions, responsive to one or more input/output errors occurring on the device path during the time window, for incrementing an error count by one;
instructions for determining whether the error count reaches a predetermined limit; and
instructions, responsive to the error count reaching the predetermined limit, for disabling the device path.

27. (Canceled)

28. (New) The method of claim 4, wherein determining a new time span for the time window comprises:

determining if the time span equals zero;
responsive to the time span equaling zero, setting the time span to command time;
and
responsive to the time span not equaling zero, setting the time span equal to
 $(19 * \text{time span} + \text{command time})/20$.

29. (New) The apparatus of claim 15, wherein means for determining a new time span for the time window further comprises:

means for determining if the time span equals zero;
means, responsive to the time span equaling zero, for setting the time span to command time; and
means, responsive to the time span not equaling zero, for setting time span equal to $(19 * \text{time span} + \text{command time})/20$.

30. (New) The computer program product of claim 26, wherein means for determining a new time span for the time window further comprises:

instructions for determining if time span equals zero;
instructions, responsive to time span equaling zero, for setting the time span to command time; and
instructions, responsive to the time span not equaling zero, for setting time span equal to $(19 * \text{time span} + \text{command time})/20$.